MT-MDH is 338 amino acids in length and has two potential N-glycosylation sites at residues N-117 and N-145, seven potential casein kinase II phosphorylation sites at T-54, S-69, T-109, T-170, S-261, S-309, and S-310, four potential protein kinase C phosphorylation sites at residues T-213, T-227, S-326, and T-336, a mitochondrial malate dehydrogenase active site signature between residues V-169 and V-181, and a transit peptide sequence from residues M-1 to N-24. As shown in Figures 2A and 2B, MT-MDH has chemical and structural homology with murine mitochondrial mitochondrial malate dehydrogenase (GI 56643; SEQ ID NO:3) and porcine mitochondrial mitochondrial malate dehydrogenase (GI 164541; SEQ ID NO:4). In particular, MT-MDH and murine mitochondrial mitochondrial malate dehydrogenase share 94% identity, share both potential N-glycosylation sites, six potential casein kinase II sites, three potential protein kinase C sites, the mitochondrial malate dehydrogenase active site signature, and the transit peptide sequence. As illustrated by Figures 3A and 3B, respectively, MT-MDH and murine mitochondrial mitochondrial malate dehydrogenase (SEQ ID NO:3) have similar isoelectric points (pI = 8.8). As illustrated by Figures 4A and 4B, MT-MDH contains potential NAD(H) and NADP(H) binding site motifs. Northern analysis shows the expression of this sequence in various libraries, at least 49% of which are immortalized or cancerous and at least 24% of which involve immune response. Of particular note is the expression of MT-MDH in fetal tissues; in cardiovascular, gut, nervous, and reproductive tissues; and in secretory and hematopoietic tissues.

## IN THE CLAIMS

Please cancel claims 1, 2, 8, 11, 13, 17 and 18 without prejudice or disclaimer.

Please replace claims 3, 4, 9 and 12 with the following amended versions. For the Examiner's convenience, all pending claims are listed below. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"